



**Oasis International School Model United Nations**

The Environment Commission

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Guiding Package

Topic 2 : Measures to manage the rapid deterioration to the Arctic

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## **Abstract:**

One characteristic of the Arctic is that its existence is above the imaginary Arctic Circle, where the Arctic sea can be found. Nevertheless, it should not be confused with the North Pole.

The Arctic has a significant importance to this planet. It is the home to 4 million people and many animals and marine life. In addition to being a icy shelter, it serves the environment greatly. From the satellite images, the Arctic is considered to be a huge white layer of ice that reflects the sun rays to even the planet's temperature. In addition, it helps the circulation of the world's ocean currents in order to distribute the warm and cold water.

However, due to the excessive use of fossil fuels, the unbalanced carbon cycle and deforestation, the extra carbon dioxide in the planet's atmosphere is rapidly raising the global temperature. In which, the rapid deterioration of the Arctic is its consequence. This leads to global warming and climate change as the sun's heat is absorbed by the ocean instead of being dispersed by the Arctic.

## **Introduction:**

Resources that humans exploit by virtue of their benefits to society are sometimes not as useful and carry with them drawbacks. Taking for example the deforestation phenomenon where trees are cut down for the use of building, where in fact humans are actually destroying natural habitats. Furthermore destroying the main source of oxygen which, as stated before leads to an immense amount of carbon dioxide in the air . This increase in carbon dioxide is one of the few influencing factors on the deterioration of the Arctic. Due to the lack of thickness of the ice in the arctic, an uprising in temperature has a significant effect on it by reason of the researchers from the National Oceanic and Atmospheric Administration who have found that in the past few decades the Arctic has deteriorated drastically. The burning of fossil fuels is also a main factor in Climate Change on the grounds that over the past 50 years, most of the warming is attributed to the burning of fossil fuels. Over the course of two centuries the temperature of the earth's surface is of 1 fahrenheit, which might not seem as an important difference, but plays a significant role in the deterioration of the arctic.

The deterioration of the arctic greatly affects our ecosystem and our climate. Moreover, it will put pressure on fragile and rare arctic populations view that the Arctic is home to many different plants, animals and people ( the estimated amount of people residing in the arctic are 4 000 000 people ), now that pollution and climate change are in place, these different species residing in the Arctic befall major danger.

Other than the danger to the different species, the main 5 drawbacks of the Arctic deterioration are:

### **1. More heat absorption:**

Since the ice layer that reflects most of the sun rays will eventually completely melt, the 85% of sunlight that was constantly being reflected will be absorbed by the open waters.

### **2. Melting Greenland ice sheet raises sea levels:**

Greenland border are mostly consisted of layers of ice which are currently melting year after year, until now as land ice melts it has contributed in the raising of the sea level by approximately 7.8 mm.

### **3. Permafrost amplifies warming:**

Permafrost is a frozen ground in the arctic which contains a lot of carbon dioxide and methane gas that, if melted will release that quantity into the air which will increase the warming rate.

#### 4. Ocean circulations:

The layers melting might cause the circulation to be disrupted and go in different directions

#### 5. Winter weather:

The melting of the arctic might sometimes cause sudden outbreaks of cold in the winter season in the upper hemisphere part of the globe.

## **Definition of key terms:**

- **The Arctic circle:** “An imaginary line drawn parallel to the equator, at 23°28 prime; S of the North Pole: between the North Frigid Zone and the North Temperate Zone.”<sup>1</sup> Above the Arctic circle is the location of the Arctic. the Arctic circle is the border of the Arctic and it’s sea.
- **White reflector:** “A region made of snow that reflects the sun rays back into space, helping to keep an even planet temperature.”<sup>2</sup> A very important key term as it explains one of the main reason why the Arctic is important to our planet.
- **Global warming:** “An increase in the earth's average atmospheric temperature that causes corresponding changes in climate and that may result from the greenhouse effect.”<sup>3</sup> Global warming is one of the reason the Arctic is deteriorating. For this reason, the definition of this key term is extremely important.
- **Climate change:** “A long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature.”<sup>4</sup> Climate change is one of the consequences of the deterioration of the Arctic.
- **Carbon cycle:** “The circulation of carbon atoms in the biosphere as a result of photosynthetic conversion of carbon dioxide into complex organic compounds by plants, which are consumed by other organisms: the carbon returns to the atmosphere in the form of carbon dioxide as a result of respiration, decay by fungi, bacteria, etc., and combustion of fossil fuels.”<sup>5</sup> The unbalanced carbon cycle is one of the reasons that the Arctic is melting since it raises the temperature level of the planet.
- **Fossil fuels:** “Any combustible organic material, as oil, coal, or natural gas, derived from the remains of former life.”<sup>6</sup> When fossil fuel are burnt, more carbon dioxide is being released in the air and because of deforestation, there aren’t enough trees to absorb this carbon dioxide.

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<sup>1</sup> © 2015 Dictionary.com, LLC.

<sup>2</sup> [http://www.wwf.org.uk/where\\_we\\_work/oceans\\_arctic/](http://www.wwf.org.uk/where_we_work/oceans_arctic/)

<sup>3</sup> © 2015 Dictionary.com, LLC.

<sup>4</sup> © 2015 Dictionary.com, LLC.

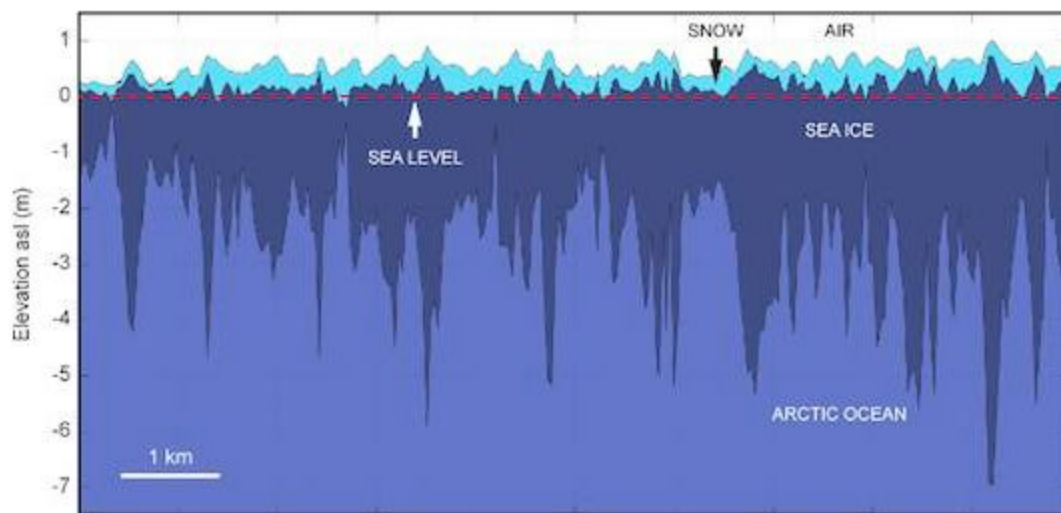
<sup>5</sup> © 2015 Dictionary.com, LLC.

<sup>6</sup> © 2015 Dictionary.com, LLC.

## **Background information:**

### **Information about the importance of the Arctic:**

- It reflects the sun rays in order to maintain the planet's temperature and protects it from UV radiation.
- It influences ocean currents, since oceans and air acts move heat to the poles in order to balance out the temperature.
- The Arctic ice serves as an isolator between the Arctic ocean and the winter air which is colder, which limits the warmth radiated by the ocean.



Older, multiyear sea ice can grow much thicker and sturdier than first-year ice. (Illustration: NASA)

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- The Arctic is well known for balancing severe weather, however as it melts climate change is becoming it's consequence.
- Native Alaskans live in the Arctic area, nearly 180 communities have been recognized as natives living there.
- It is home to many animal species that can only survive in Arctic conditions, such as the polar bear and the walrus.

### **Information about the causes of the rapid deterioration of the Arctic:**

- Global warming, as high temperature melts the ice.
- Excess carbon dioxide in the atmosphere, which is caused by pollution and deforestation.

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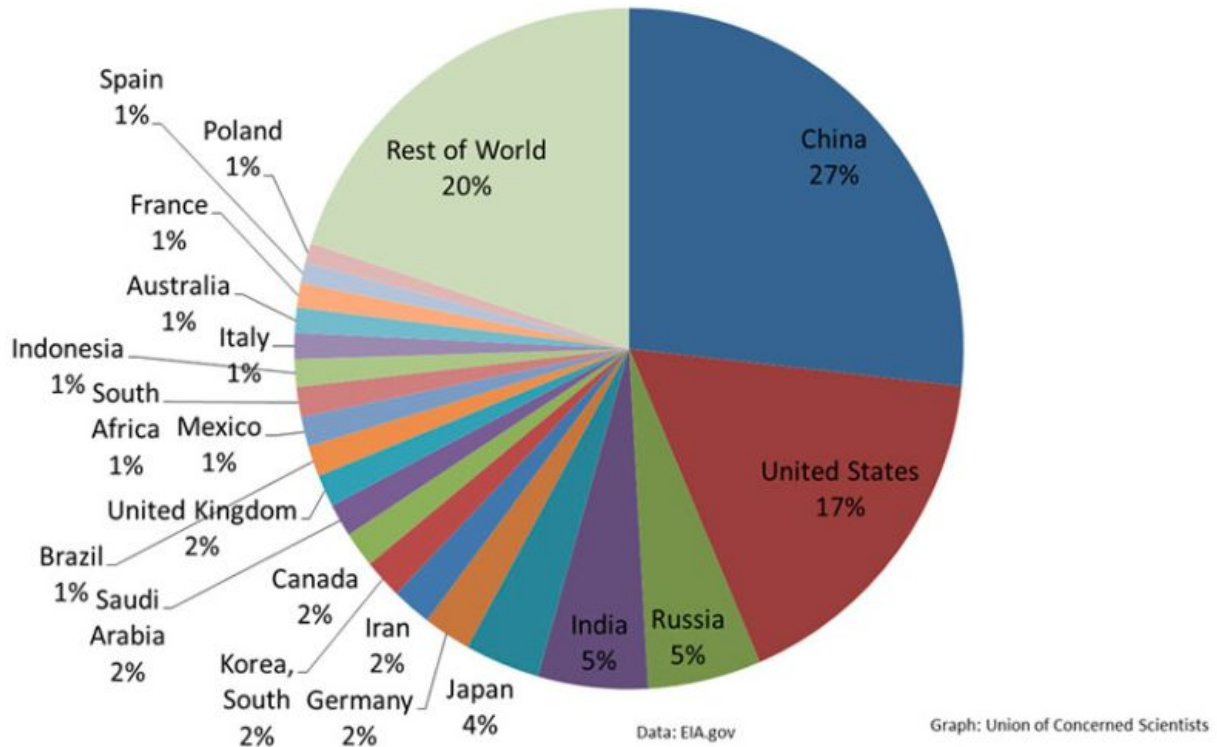
<sup>7</sup> <http://www.mnn.com/earth-matters/wilderness-resources/blogs/7-reasons-why-arctic-sea-ice-matters>

- Fossil fuels, which is being used to create energy.

Information about the major countries responsible:

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**Each Country's Share of 2011 Total Carbon Dioxide Emissions from the Consumption of Energy**







### 2011 Country Rank Total Carbon Dioxide Emissions from the Consumption of Energy (Million Metric Tons)



## Countries and organizations involved:

### Major countries involved:

<u>Countries in which the Arctic is part of it.</u>
Canada
Finland
Iceland
Norway
Russia
Sweden
USA (Alaska)
USA

### Major organizations involved:

- World Wildlife Foundation (WWF).

While focusing on protecting the earth's wildlife, the WWF treats climate change as an influencing factor that endangers wildlife.

- Intergovernmental Panel on Climate Change (IPCC).

The IPCC focuses on climate change and the effects it might have on our ecosystem

- United Nation's Environment Program (UNEP)

The official program representing the UN in protecting the earth's ecosystem. As a result of their hard work they were able to limit the effects of climate change.

- World Nature Organization (WNO)

The WNO is dedicated to the protection of the environment at international level. One of its main focus is on climate protection

### **Guiding questions:**

1. What is your country's stance when it come to the deterioration of the Arctic?
2. Has your country ever been hit by a natural disaster that occurred because of the deterioration of the Arctic?
3. What is your country's political, economic and environmental status?
4. Which aspects of conserving the Arctic and save the ecosystem are the most important?
5. Is your country involved in any national or international organizations concerning this issue?
6. What steps can the Environment Commission take to address the problems that the ecosystem is facing when it comes to the deterioration of the Arctic?

## **UN involvement:**

The United Nations has been immensely involved in this issue. Ever since the deterioration of the Arctic has spiraled out of control, more actions have been taken by the United Nations. One of those actions is to create UNEP, which stands for the United Nations Environment Program. This program has been created in order to save the Environment. To do so, it implements environmentally sound policies and actions in order to solve every issue.

Other serious actions that can perhaps highlight the UN's dedication to environmental issues and the need to tackle problems such as global warming can be traced back to the Brundtland Report, also known as 'Our Common Future'. The report, published in 1987, calls for the interdependence of nations and the need for collective unity targeting the problems faced by our planet in terms of air, water, as well as animal species.

### **Possible solutions:**

1. Create a new international law that prohibits cutting down a certain amounts of trees in order to balance out the carbon cycle.
2. Use state of the art technology in order to conserve the ice from melting.
3. Find a new shelter for all the animals that live in the Arctic that are at risk.
4. Use renewable energy instead of fossil fuels to balance out the carbon cycle.
5. Promote recycling in order to stop deforestation.

## **Useful links:**

1. <https://www.worldwildlife.org>
2. <http://nsidc.org/cryosphere/arctic-meteorology/arctic.html>
3. <http://www.grida.no/publications/et/at/page/2557.aspx>
4. [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/science/each-countrys-share-of-co2.html#.Vg5OxmB9vww](http://www.ucsusa.org/global_warming/science_and_impacts/science/each-countrys-share-of-co2.html#.Vg5OxmB9vww).

## **Bibliography:**

- <https://www.worldwildlife.org>.
- <http://nsidc.org/cryosphere/arctic-meteorology/arctic.html>
- <http://www.grida.no/publications/et/at/page/2557.aspx>
- <http://webcoist.momtastic.com/2008/09/24/25-environmental-agencies-and-organizations/>
- <http://limun.org.uk/FCKfiles/File/UNEP.pdf>